



1/28

SEQUENCE LISTING

<110> Markowitz, Sanford D.

<120> METHODS AND COMPOSITIONS FOR
CATEGORIZING PATIENTS

<130> CWRU-P03-003

<140> US 10/649,591

<141> 2003-08-26

<150> US 10/229,345

<151> 2002-08-26

<150> US 10/274,177

<151> 2002-10-18

<160> 22

<170> FastSEQ for Windows Version 4.0

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<211> 1331

<212> PRT

<213> Homo sapiens

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Thr	Leu	Leu	Leu	Thr	Ser	Ser	Ala	Thr	Val	Tyr	Ser	Ile	His	Ile	Ser
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Glu	Gly	Gly	Lys	Leu	Val	Ile	Lys	Asp	His	Asp	Glu	Pro	Ile	Val	Leu
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Arg	Thr	Arg	His	Ile	Leu	Ile	Asp	Asn	Gly	Gly	Glu	Leu	His	Ala	Gly
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Ser	Ala	Leu	Cys	Pro	Phe	Gln	Gly	Asn	Phe	Thr	Ile	Ile	Leu	Tyr	Gly
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Arg	Ala	Asp	Glu	Gly	Ile	Gln	Pro	Asp	Pro	Tyr	Tyr	Gly	Leu	Lys	Tyr
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Ile	Gly	Val	Gly	Lys	Gly	Gly	Ala	Leu	Glu	Leu	His	Gly	Gln	Lys	Lys
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Leu	Ser	Trp	Thr	Phe	Leu	Asn	Lys	Thr	Leu	His	Pro	Gly	Gly	Met	Ala
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Glu	Gly	Gly	Tyr	Phe	Phe	Glu	Arg	Ser	Trp	Gly	His	Arg	Gly	Val	Ile
145					150				155						160
Val	His	Val	Ile	Asp	Pro	Lys	Ser	Gly	Thr	Val	Ile	His	Ser	Asp	Arg
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Phe	Asp	Thr	Tyr	Arg	Ser	Lys	Lys	Glu	Ser	Glu	Arg	Leu	Val	Gln	Tyr
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Leu	Asn	Ala	Val	Pro	Asp	Gly	Arg	Ile	Leu	Ser	Val	Ala	Val	Asn	Asp
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Glu	Gly	Ser	Arg	Asn	Leu	Asp	Asp	Met	Ala	Arg	Lys	Ala	Met	Thr	Lys
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Leu	Gly	Ser	Lys	His	Phe	Leu	His	Leu	Gly	Phe	Arg	His	Pro	Trp	Ser
225					230					235					240

Phe	Leu	Thr	Val	Lys	Gly	Asn	Pro	Ser	Ser	Ser	Val	Glu	Asp	His	Ile
				245					250					255	
Glu	Tyr	His	Gly	His	Arg	Gly	Ser	Ala	Ala	Ala	Arg	Val	Phe	Lys	Leu
			260					265					270		
Phe	Gln	Thr	Glu	His	Gly	Glu	Tyr	Phe	Asn	Val	Ser	Leu	Ser	Ser	Glu
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Trp	Val	Gln	Asp	Val	Glu	Trp	Thr	Glu	Trp	Phe	Asp	His	Asp	Lys	Val
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Pro	Gly	Lys	Ile	Cys	Asn	Arg	Pro	Ile	Asp	Ile	Gln	Ala	Thr	Thr	Met
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Asp	Gly	Val	Asn	Leu	Ser	Thr	Glu	Val	Val	Tyr	Lys	Lys	Gly	Gln	Asp
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Tyr	Arg	Phe	Ala	Cys	Tyr	Asp	Arg	Gly	Arg	Ala	Cys	Arg	Ser	Tyr	Arg
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Val	Arg	Phe	Leu	Cys	Gly	Lys	Pro	Val	Arg	Pro	Lys	Leu	Thr	Val	Thr
	370					375					380				
Ile	Asp	Thr	Asn	Val	Asn	Ser	Thr	Ile	Leu	Asn	Leu	Glu	Asp	Asn	Val
385					390					395					400
Gln	Ser	Trp	Lys	Pro	Gly	Asp	Thr	Leu	Val	Ile	Ala	Ser	Thr	Asp	Tyr
			405					410						415	
Ser	Met	Tyr	Gln	Ala	Glu	Glu	Phe	Gln	Val	Leu	Pro	Cys	Arg	Ser	Cys
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Ala	Pro	Asn	Gln	Val	Lys	Val	Ala	Gly	Lys	Pro	Met	Tyr	Leu	His	Ile
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Gly	Glu	Glu	Ile	Asp	Gly	Val	Asp	Met	Arg	Ala	Glu	Val	Gly	Leu	Leu
	450				455					460					
Ser	Arg	Asn	Ile	Ile	Val	Met	Gly	Glu	Met	Glu	Asp	Lys	Cys	Tyr	Pro
465					470					475					480
Tyr	Arg	Asn	His	Ile	Cys	Asn	Phe	Phe	Asp	Phe	Asp	Thr	Phe	Gly	Gly
			485					490						495	
His	Ile	Lys	Phe	Ala	Leu	Gly	Phe	Lys	Ala	Ala	His	Leu	Glu	Gly	Thr
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Glu	Leu	Lys	His	Met	Gly	Gln	Gln	Leu	Val	Gly	Gln	Tyr	Pro	Ile	His
		515				520						525			
Phe	His	Leu	Ala	Gly	Asp	Val	Asp	Glu	Arg	Gly	Gly	Tyr	Asp	Pro	Pro
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Thr	Tyr	Ile	Arg	Asp	Leu	Ser	Ile	His	His	Thr	Phe	Ser	Arg	Cys	Val
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Thr	Val	His	Gly	Ser	Asn	Gly	Leu	Leu	Ile	Lys	Asp	Val	Val	Gly	Tyr
			565					570						575	
Asn	Ser	Leu	Gly	His	Cys	Phe	Phe	Thr	Glu	Asp	Gly	Pro	Glu	Glu	Arg
			580					585					590		
Asn	Thr	Phe	Asp	His	Cys	Leu	Gly	Leu	Leu	Val	Lys	Ser	Gly	Thr	Leu
		595				600						605			
Leu	Pro	Ser	Asp	Arg	Asp	Ser	Lys	Met	Cys	Lys	Met	Ile	Thr	Glu	Asp
	610					615					620				
Ser	Tyr	Pro	Gly	Tyr	Ile	Pro	Lys	Pro	Arg	Gln	Asp	Cys	Asn	Ala	Val
625					630					635					640
Ser	Thr	Phe	Trp	Met	Ala	Asn	Pro	Asn	Asn	Asn	Leu	Ile	Asn	Cys	Ala
			645						650					655	
Ala	Ala	Gly	Ser	Glu	Glu	Thr	Gly	Phe	Trp	Phe	Ile	Phe	His	His	Val
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Pro	Thr	Gly	Pro	Ser	Val	Gly	Met	Tyr	Ser	Pro	Gly	Tyr	Ser	Glu	His
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Ile	Pro	Leu	Gly	Lys	Phe	Tyr	Asn	Asn	Arg	Ala	His	Ser	Asn	Tyr	Arg
	690					695					700				

Ala	Gly	Met	Ile	Ile	Asp	Asn	Gly	Val	Lys	Thr	Thr	Glu	Ala	Ser	Ala	705	710	715	720
Lys	Asp	Lys	Arg	Pro	Phe	Leu	Ser	Ile	Ile	Ser	Ala	Arg	Tyr	Ser	Pro	725	730	735	
His	Gln	Asp	Ala	Asp	Pro	Leu	Lys	Pro	Arg	Glu	Pro	Ala	Ile	Ile	Arg	740	745	750	
His	Phe	Ile	Ala	Tyr	Lys	Asn	Gln	Asp	His	Gly	Ala	Trp	Leu	Arg	Gly	755	760	765	
Gly	Asp	Val	Trp	Leu	Asp	Ser	Cys	Arg	Phe	Ala	Asp	Asn	Gly	Ile	Gly	770	775	780	
Leu	Thr	Leu	Ala	Ser	Gly	Gly	Thr	Phe	Pro	Tyr	Asp	Asp	Gly	Ser	Lys	785	790	795	800
Gln	Glu	Ile	Lys	Asn	Ser	Leu	Phe	Val	Gly	Glu	Ser	Gly	Asn	Val	Gly	805	810	815	
Thr	Glu	Met	Met	Asp	Asn	Arg	Ile	Trp	Gly	Pro	Gly	Gly	Leu	Asp	His	820	825	830	
Ser	Gly	Arg	Thr	Leu	Pro	Ile	Gly	Gln	Asn	Phe	Pro	Ile	Arg	Gly	Ile	835	840	845	
Gln	Leu	Tyr	Asp	Gly	Pro	Ile	Asn	Ile	Gln	Asn	Cys	Thr	Phe	Arg	Lys	850	855	860	
Phe	Val	Ala	Leu	Glu	Gly	Arg	His	Thr	Ser	Ala	Leu	Ala	Phe	Arg	Leu	865	870	875	880
Asn	Asn	Ala	Trp	Gln	Ser	Cys	Pro	His	Asn	Asn	Val	Thr	Gly	Ile	Ala	885	890	895	
Phe	Glu	Asp	Val	Pro	Ile	Thr	Ser	Arg	Val	Phe	Phe	Gly	Glu	Pro	Gly	900	905	910	
Pro	Trp	Phe	Asn	Gln	Leu	Asp	Met	Asp	Gly	Asp	Lys	Thr	Ser	Val	Phe	915	920	925	
His	Asp	Val	Asp	Gly	Ser	Val	Ser	Glu	Tyr	Pro	Gly	Ser	Tyr	Leu	Thr	930	935	940	
Lys	Asn	Asp	Asn	Trp	Leu	Val	Arg	His	Pro	Asp	Cys	Ile	Asn	Val	Pro	945	950	955	960
Asp	Trp	Arg	Gly	Ala	Ile	Cys	Ser	Gly	Cys	Tyr	Ala	Gln	Met	Tyr	Ile	965	970	975	
Gln	Ala	Tyr	Lys	Thr	Ser	Asn	Leu	Arg	Met	Lys	Ile	Ile	Lys	Asn	Asp	980	985	990	
Phe	Pro	Ser	His	Pro	Leu	Tyr	Leu	Glu	Gly	Ala	Leu	Thr	Arg	Ser	Thr	995	1000	1005	
His	Tyr	Gln	Gln	Tyr	Gln	Pro	Val	Val	Thr	Leu	Gln	Lys	Gly	Tyr	Thr	1010	1015	1020	
Ile	His	Trp	Asp	Gln	Thr	Ala	Pro	Ala	Glu	Leu	Ala	Ile	Trp	Leu	Ile	1025	1030	1035	1040
Asn	Phe	Asn	Lys	Gly	Asp	Trp	Ile	Arg	Val	Gly	Leu	Cys	Tyr	Pro	Arg	1045	1050	1055	
Gly	Thr	Thr	Phe	Ser	Ile	Leu	Ser	Asp	Val	His	Asn	Arg	Leu	Leu	Lys	1060	1065	1070	
Gln	Thr	Ser	Lys	Thr	Gly	Val	Phe	Val	Arg	Thr	Leu	Gln	Met	Asp	Lys	1075	1080	1085	
Val	Glu	Gln	Ser	Tyr	Pro	Gly	Arg	Ser	His	Tyr	Tyr	Trp	Asp	Glu	Asp	1090	1095	1100	
Ser	Gly	Leu	Leu	Phe	Leu	Lys	Leu	Lys	Ala	Gln	Asn	Glu	Arg	Glu	Lys	1105	1110	1115	1120
Phe	Ala	Phe	Cys	Ser	Met	Lys	Gly	Cys	Glu	Arg	Ile	Lys	Ile	Lys	Ala	1125	1130	1135	
Leu	Ile	Pro	Lys	Asn	Ala	Gly	Val	Ser	Asp	Cys	Thr	Ala	Thr	Ala	Tyr	1140	1145	1150	
Pro	Lys	Phe	Thr	Glu	Arg	Ala	Val	Val	Asp	Val	Pro	Met	Pro	Lys	Lys	1155	1160	1165	

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Met Glu Ser Ser Lys Gln His Phe Phe His Leu Trp Asn Asp Phe Ala
1185 1190 1195 1200
Tyr Ile Glu Val Asp Gly Lys Lys Tyr Pro Ser Ser Glu Asp Gly Ile
1205 1210 1215
Gln Val Val Val Ile Asp Gly Asn Gln Gly Arg Val Val Ser His Thr
1220 1225 1230
Ser Phe Arg Asn Ser Ile Leu Gln Gly Ile Pro Trp Gln Leu Phe Asn
1235 1240 1245
Tyr Val Ala Thr Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser Lys
1250 1255 1260
Gly Arg Tyr Val Ser Arg Gly Pro Trp Thr Arg Val Leu Glu Lys Leu
1265 1270 1275 1280
Gly Ala Asp Arg Gly Leu Lys Leu Lys Glu Gln Met Ala Phe Val Gly
1285 1290 1295
Phe Lys Gly Ser Phe Arg Pro Ile Trp Val Thr Leu Asp Thr Glu Asp
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His Lys Ala Lys Ile Phe Gln Val Val Pro Ile Pro Val Val Lys Lys
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Lys Lys Leu
1330

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<212> PRT
<213> Homo sapiens

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35 40 45
Lys Leu Val Ile Lys Asp His Asp Glu Pro Ile Val Leu Arg Thr Arg
50 55 60
His Ile Leu Ile Asp Asn Gly Gly Glu Leu His Ala Gly Ser Ala Leu
65 70 75 80
Cys Pro Phe Gln Gly Asn Phe Thr Ile Ile Leu Tyr Gly Arg Ala Asp
85 90 95
Glu Gly Ile Gln Pro Asp Pro Tyr Tyr Gly Leu Lys Tyr Ile Gly Val
100 105 110
Gly Lys Gly Gly Ala Leu Glu Leu His Gly Gln Lys Lys Leu Ser Trp
115 120 125
Thr Phe Leu Asn Lys Thr Leu His Pro Gly Gly Met Ala Glu Gly Gly
130 135 140
Tyr Phe Phe Glu Arg Ser Trp Gly His Arg Gly Val Ile Val His Val
145 150 155 160
Ile Asp Pro Lys Ser Gly Thr Val Ile His Ser Asp Arg Phe Asp Thr
165 170 175
Tyr Arg Ser Lys Lys Glu Ser Glu Arg Leu Val Gln Tyr Leu Asn Ala
180 185 190
Val Pro Asp Gly Arg Ile Leu Ser Val Ala Val Asn Asp Glu Gly Ser
195 200 205
Arg Asn Leu Asp Asp Met Ala Arg Lys Ala Met Thr Lys Leu Gly Ser
210 215 220

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Lys	His	Phe	Leu	His	Leu	Gly	Phe	Arg	His	Pro	Trp	Ser	Phe	Leu	Thr
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			245						250					255	
Gly	His	Arg	Gly	Ser	Ala	Ala	Ala	Arg	Val	Phe	Lys	Leu	Phe	Gln	Thr
			260					265					270		
Glu	His	Gly	Glu	Tyr	Phe	Asn	Val	Ser	Leu	Ser	Ser	Glu	Trp	Val	Gln
		275					280					285			
Asp	Val	Glu	Trp	Thr	Glu	Trp	Phe	Asp	His	Asp	Lys	Val	Ser	Gln	Thr
	290					295					300				
Lys	Gly	Gly	Glu	Lys	Ile	Ser	Asp	Leu	Trp	Lys	Ala	His	Pro	Gly	Lys
305					310					315					320
Ile	Cys	Asn	Arg	Pro	Ile	Asp	Ile	Gln	Ala	Thr	Thr	Met	Asp	Gly	Val
				325					330					335	
Asn	Leu	Ser	Thr	Glu	Val	Val	Tyr	Lys	Lys	Gly	Gln	Asp	Tyr	Arg	Phe
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Ala	Cys	Tyr	Asp	Arg	Gly	Arg	Ala	Cys	Arg	Ser	Tyr	Arg	Val	Arg	Phe
		355					360						365		
Leu	Cys	Gly	Lys	Pro	Val	Arg	Pro	Lys	Leu	Thr	Val	Thr	Ile	Asp	Thr
	370					375					380				
Asn	Val	Asn	Ser	Thr	Ile	Leu	Asn	Leu	Glu	Asp	Asn	Val	Gln	Ser	Trp
385					390					395					400
Lys	Pro	Gly	Asp	Thr	Leu	Val	Ile	Ala	Ser	Thr	Asp	Tyr	Ser	Met	Tyr
				405					410					415	
Gln	Ala	Glu	Glu	Phe	Gln	Val	Leu	Pro	Cys	Arg	Ser	Cys	Ala	Pro	Asn
			420					425					430		
Gln	Val	Lys	Val	Ala	Gly	Lys	Pro	Met	Tyr	Leu	His	Ile	Gly	Glu	Glu
		435					440					445			
Ile	Asp	Gly	Val	Asp	Met	Arg	Ala	Glu	Val	Gly	Leu	Leu	Ser	Arg	Asn
	450					455					460				
Ile	Ile	Val	Met	Gly	Glu	Met	Glu	Asp	Lys	Cys	Tyr	Pro	Tyr	Arg	Asn
465					470					475					480
His	Ile	Cys	Asn	Phe	Phe	Asp	Phe	Asp	Thr	Phe	Gly	Gly	His	Ile	Lys
			485						490					495	
Phe	Ala	Leu	Gly	Phe	Lys	Ala	Ala	His	Leu	Glu	Gly	Thr	Glu	Leu	Lys
			500					505					510		
His	Met	Gly	Gln	Gln	Leu	Val	Gly	Gln	Tyr	Pro	Ile	His	Phe	His	Leu
		515					520					525			
Ala	Gly	Asp	Val	Asp	Glu	Arg	Gly	Gly	Tyr	Asp	Pro	Pro	Thr	Tyr	Ile
	530					535					540				
Arg	Asp	Leu	Ser	Ile	His	His	Thr	Phe	Ser	Arg	Cys	Val	Thr	Val	His
545					550					555					560
Gly	Ser	Asn	Gly	Leu	Leu	Ile	Lys	Asp	Val	Val	Gly	Tyr	Asn	Ser	Leu
				565					570					575	
Gly	His	Cys	Phe	Phe	Thr	Glu	Asp	Gly	Pro	Glu	Glu	Arg	Asn	Thr	Phe
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Asp	His	Cys	Leu	Gly	Leu	Leu	Val	Lys	Ser	Gly	Thr	Leu	Leu	Pro	Ser
		595					600					605			
Asp	Arg	Asp	Ser	Lys	Met	Cys	Lys	Met	Ile	Thr	Glu	Asp	Ser	Tyr	Pro
	610					615					620				
Gly	Tyr	Ile	Pro	Lys	Pro	Arg	Gln	Asp	Cys	Asn	Ala	Val	Ser	Thr	Phe
625					630					635					640
Trp	Met	Ala	Asn	Pro	Asn	Asn	Asn	Leu	Ile	Asn	Cys	Ala	Ala	Ala	Gly
				645					650					655	
Ser	Glu	Glu	Thr	Gly	Phe	Trp	Phe	Ile	Phe	His	His	Val	Pro	Thr	Gly
			660					665					670		
Pro	Ser	Val	Gly	Met	Tyr	Ser	Pro	Gly	Tyr	Ser	Glu	His	Ile	Pro	Leu
		675					680					685			

Gly	Lys	Phe	Tyr	Asn	Asn	Arg	Ala	His	Ser	Asn	Tyr	Arg	Ala	Gly	Met
	690					695					700				
Ile	Ile	Asp	Asn	Gly	Val	Lys	Thr	Thr	Glu	Ala	Ser	Ala	Lys	Asp	Lys
705					710					715					720
Arg	Pro	Phe	Leu	Ser	Ile	Ile	Ser	Ala	Arg	Tyr	Ser	Pro	His	Gln	Asp
				725					730					735	
Ala	Asp	Pro	Leu	Lys	Pro	Arg	Glu	Pro	Ala	Ile	Ile	Arg	His	Phe	Ile
			740					745					750		
Ala	Tyr	Lys	Asn	Gln	Asp	His	Gly	Ala	Trp	Leu	Arg	Gly	Gly	Asp	Val
		755					760					765			
Trp	Leu	Asp	Ser	Cys	Arg	Phe	Ala	Asp	Asn	Gly	Ile	Gly	Leu	Thr	Leu
770						775					780				
Ala	Ser	Gly	Gly	Thr	Phe	Pro	Tyr	Asp	Asp	Gly	Ser	Lys	Gln	Glu	Ile
785					790					795					800
Lys	Asn	Ser	Leu	Phe	Val	Gly	Glu	Ser	Gly	Asn	Val	Gly	Thr	Glu	Met
				805					810					815	
Met	Asp	Asn	Arg	Ile	Trp	Gly	Pro	Gly	Gly	Leu	Asp	His	Ser	Gly	Arg
			820					825				830			
Thr	Leu	Pro	Ile	Gly	Gln	Asn	Phe	Pro	Ile	Arg	Gly	Ile	Gln	Leu	Tyr
		835					840					845			
Asp	Gly	Pro	Ile	Asn	Ile	Gln	Asn	Cys	Thr	Phe	Arg	Lys	Phe	Val	Ala
	850					855					860				
Leu	Glu	Gly	Arg	His	Thr	Ser	Ala	Leu	Ala	Phe	Arg	Leu	Asn	Asn	Ala
865					870					875					880
Trp	Gln	Ser	Cys	Pro	His	Asn	Asn	Val	Thr	Gly	Ile	Ala	Phe	Glu	Asp
				885					890					895	
Val	Pro	Ile	Thr	Ser	Arg	Val	Phe	Phe	Gly	Glu	Pro	Gly	Pro	Trp	Phe
			900					905					910		
Asn	Gln	Leu	Asp	Met	Asp	Gly	Asp	Lys	Thr	Ser	Val	Phe	His	Asp	Val
		915					920					925			
Asp	Gly	Ser	Val	Ser	Glu	Tyr	Pro	Gly	Ser	Tyr	Leu	Thr	Lys	Asn	Asp
	930					935					940				
Asn	Trp	Leu	Val	Arg	His	Pro	Asp	Cys	Ile	Asn	Val	Pro	Asp	Trp	Arg
945					950					955					960
Gly	Ala	Ile	Cys	Ser	Gly	Cys	Tyr	Ala	Gln	Met	Tyr	Ile	Gln	Ala	Tyr
				965					970					975	
Lys	Thr	Ser	Asn	Leu	Arg	Met	Lys	Ile	Lys	Asn	Asp	Phe	Pro	Ser	
			980					985				990			
His	Pro	Leu	Tyr	Leu	Glu	Gly	Ala	Leu	Thr	Arg	Ser	Thr	His	Tyr	Gln
		995					1000					1005			
Gln	Tyr	Gln	Pro	Val	Val	Thr	Leu	Gln	Lys	Gly	Tyr	Thr	Ile	His	Trp
	1010					1015					1020				
Asp	Gln	Thr	Ala	Pro	Ala	Glu	Leu	Ala	Ile	Trp	Leu	Ile	Asn	Phe	Asn
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Lys	Gly	Asp	Trp	Ile	Arg	Val	Gly	Leu	Cys	Tyr	Pro	Arg	Gly	Thr	Thr
				1045					1050					1055	
Phe	Ser	Ile	Leu	Ser	Asp	Val	His	Asn	Arg	Leu	Leu	Lys	Gln	Thr	Ser
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Lys	Thr	Gly	Val	Phe	Val	Arg	Thr	Leu	Gln	Met	Asp	Lys	Val	Glu	Gln
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Ser	Tyr	Pro	Gly	Arg	Ser	His	Tyr	Tyr	Trp	Asp	Glu	Asp	Ser	Gly	Leu
	1090					1095					1100				
Leu	Phe	Leu	Lys	Leu	Lys	Ala	Gln	Asn	Glu	Arg	Glu	Lys	Phe	Ala	Phe
1105					1110					1115					1120
Cys	Ser	Met	Lys	Gly	Cys	Glu	Arg	Ile	Lys	Ile	Lys	Ala	Leu	Ile	Pro
				1125					1130					1135	
Lys	Asn	Ala	Gly	Val	Ser	Asp	Cys	Thr	Ala	Thr	Ala	Tyr	Pro	Lys	Phe
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Thr Glu Arg Ala Val Val Asp Val Pro Met Pro Lys Lys Leu Phe Gly
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Ser Gln Leu Lys Thr Lys Asp His Phe Leu Glu Val Lys Met Glu Ser
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Ser Lys Gln His Phe Phe His Leu Trp Asn Asp Phe Ala Tyr Ile Glu
1185      1190      1195      1200
Val Asp Gly Lys Lys Tyr Pro Ser Ser Glu Asp Gly Ile Gln Val Val
      1205      1210      1215
Val Ile Asp Gly Asn Gln Gly Arg Val Val Ser His Thr Ser Phe Arg
      1220      1225      1230
Asn Ser Ile Leu Gln Gly Ile Pro Trp Gln Leu Phe Asn Tyr Val Ala
      1235      1240      1245
Thr Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser Lys Gly Arg Tyr
      1250      1255      1260
Val Ser Arg Gly Pro Trp Thr Arg Val Leu Glu Lys Leu Gly Ala Asp
1265      1270      1275      1280
Arg Gly Leu Lys Leu Lys Glu Gln Met Ala Phe Val Gly Phe Lys Gly
      1285      1290      1295
Ser Phe Arg Pro Ile Trp Val Thr Leu Asp Thr Glu Asp His Lys Ala
      1300      1305      1310
Lys Ile Phe Gln Val Val Pro Ile Pro Val Val Lys Lys Lys Leu
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<210> 3
<211> 732
<212> PRT
<213> Homo sapiens

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Ala Ser Lys Met Met Trp Cys Ser Ala Ala Val Asp Ile Met Phe Leu
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Leu Asp Gly Ser Asn Ser Val Gly Lys Gly Ser Phe Glu Arg Ser Lys
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His Phe Ala Ile Thr Val Cys Asp Gly Leu Asp Ile Ser Pro Glu Arg
      50      55      60
Val Arg Val Gly Ala Phe Gln Phe Ser Ser Thr Pro His Leu Glu Phe
65      70      75      80
Pro Leu Asp Ser Phe Ser Thr Gln Gln Glu Val Lys Ala Arg Ile Lys
      85      90      95
Arg Met Val Phe Lys Gly Gly Arg Thr Glu Thr Glu Leu Ala Leu Lys
      100     105     110
Tyr Leu Leu His Arg Gly Leu Pro Gly Gly Arg Asn Ala Ser Val Pro
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Gln Ile Leu Ile Ile Val Thr Asp Gly Lys Ser Gln Gly Asp Val Ala
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Leu Pro Ser Lys Gln Leu Lys Glu Arg Gly Val Thr Val Phe Ala Val
145     150     155     160
Gly Val Arg Phe Pro Arg Trp Glu Glu Leu His Ala Leu Ala Ser Glu
      165     170     175
Pro Arg Gly Gln His Val Leu Leu Ala Glu Gln Val Glu Asp Ala Thr
      180     185     190
Asn Gly Leu Phe Ser Thr Leu Ser Ser Ser Ala Ile Cys Ser Ser Ala
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Thr Pro Asp Cys Arg Val Glu Ala His Pro Cys Glu His Arg Thr Leu
210     215     220

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Glu	Met	Val	Arg	Glu	Phe	Ala	Gly	Asn	Ala	Pro	Cys	Trp	Arg	Gly	Ser	225	230	235	240
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Lys	Arg	Val	Phe	Leu	Thr	His	Pro	Ala	Thr	Cys	Tyr	Arg	Thr	Thr	Cys	260	265	270	
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<213> Homo sapiens

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<212> DNA
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<400> 11

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<212> DNA

<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

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				325					330					335	
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			340					345					350		
Lys	Ile	Cys	Asn	Arg	Pro	Ile	Asp	Ile	Gln	Ala	Thr	Thr	Met	Asp	Gly
		355					360					365			
Val	Asn	Leu	Ser	Thr	Glu	Val	Val	Tyr	Lys	Lys	Gly	Gln	Asp	Tyr	Arg
	370					375					380				
Phe	Ala	Cys	Tyr	Asp	Arg	Gly	Arg	Ala	Cys	Arg	Ser	Tyr	Arg	Val	Arg
385					390					395					400
Phe	Leu	Cys	Gly	Lys	Pro	Val	Arg	Pro	Lys	Leu	Thr	Val	Thr	Ile	Asp
				405					410					415	
Thr	Asn	Val	Asn	Ser	Thr	Ile	Leu	Asn	Leu	Glu	Asp	Asn	Val	Gln	Ser
			420					425					430		
Trp	Lys	Pro	Gly	Asp	Thr	Leu	Val	Ile	Ala	Ser	Thr	Asp	Tyr	Ser	Met
		435					440					445			
Tyr	Gln	Ala	Glu	Glu	Phe	Gln	Val	Leu	Pro	Cys	Arg	Ser	Cys	Ala	Pro
	450					455					460				

Asn	Gln	Val	Lys	Val	Ala	Gly	Lys	Pro	Met	Tyr	Leu	His	Ile	Gly	Glu
465					470					475					480
Glu	Ile	Asp	Gly	Val	Asp	Met	Arg	Ala	Glu	Val	Gly	Leu	Leu	Ser	Arg
			485						490						495
Asn	Ile	Ile	Val	Met	Gly	Glu	Met	Glu	Asp	Lys	Cys	Tyr	Pro	Tyr	Arg
			500					505					510		
Asn	His	Ile	Cys	Asn	Phe	Phe	Asp	Phe	Asp	Thr	Phe	Gly	Gly	His	Ile
		515					520					525			
Lys	Phe	Ala	Leu	Gly	Phe	Lys	Ala	Ala	His	Leu	Glu	Gly	Thr	Glu	Leu
	530					535					540				
Lys	His	Met	Gly	Gln	Gln	Leu	Val	Gly	Gln	Tyr	Pro	Ile	His	Phe	His
545					550					555					560
Leu	Ala	Gly	Asp	Val	Asp	Glu	Arg	Gly	Gly	Tyr	Asp	Pro	Pro	Thr	Tyr
				565					570						575
Ile	Arg	Asp	Leu	Ser	Ile	His	His	Thr	Phe	Ser	Arg	Cys	Val	Thr	Val
			580					585					590		
His	Gly	Ser	Asn	Gly	Leu	Leu	Ile	Lys	Asp	Val	Val	Gly	Tyr	Asn	Ser
		595					600					605			
Leu	Gly	His	Cys	Phe	Phe	Thr	Glu	Asp	Gly	Pro	Glu	Glu	Arg	Asn	Thr
	610					615					620				
Phe	Asp	His	Cys	Leu	Gly	Leu	Leu	Val	Lys	Ser	Gly	Thr	Leu	Leu	Pro
625					630					635					640
Ser	Asp	Arg	Asp	Ser	Lys	Met	Cys	Lys	Met	Ile	Thr	Glu	Asp	Ser	Tyr
				645					650						655
Pro	Gly	Tyr	Ile	Pro	Lys	Pro	Arg	Gln	Asp	Cys	Asn	Ala	Val	Ser	Thr
			660					665					670		
Phe	Trp	Met	Ala	Asn	Pro	Asn	Asn	Asn	Leu	Ile	Asn	Cys	Ala	Ala	Ala
		675					680					685			
Gly	Ser	Glu	Glu	Thr	Gly	Phe	Trp	Phe	Ile	Phe	His	His	Val	Pro	Thr
	690					695					700				
Gly	Pro	Ser	Val	Gly	Met	Tyr	Ser	Pro	Gly	Tyr	Ser	Glu	His	Ile	Pro
705					710					715					720
Leu	Gly	Lys	Phe	Tyr	Asn	Asn	Arg	Ala	His	Ser	Asn	Tyr	Arg	Ala	Gly
				725					730					735	
Met	Ile	Ile	Asp	Asn	Gly	Val	Lys	Thr	Thr	Glu	Ala	Ser	Ala	Lys	Asp
			740					745					750		
Lys	Arg	Pro	Phe	Leu	Ser	Ile	Ile	Ser	Ala	Arg	Tyr	Ser	Pro	His	Gln
		755					760					765			
Asp	Ala	Asp	Pro	Leu	Lys	Pro	Arg	Glu	Pro	Ala	Ile	Ile	Arg	His	Phe
	770					775					780				
Ile	Ala	Tyr	Lys	Asn	Gln	Asp	His	Gly	Ala	Trp	Leu	Arg	Gly	Gly	Asp
785					790					795					800
Val	Trp	Leu	Asp	Ser	Cys	Arg	Phe	Ala	Asp	Asn	Gly	Ile	Gly	Leu	Thr
			805						810					815	
Leu	Ala	Ser	Gly	Gly	Thr	Phe	Pro	Tyr	Asp	Asp	Gly	Ser	Lys	Gln	Glu
			820					825					830		
Ile	Lys	Asn	Ser	Leu	Phe	Val	Gly	Glu	Ser	Gly	Asn	Val	Gly	Thr	Glu
		835					840					845			
Met	Met	Asp	Asn	Arg	Ile	Trp	Gly	Pro	Gly	Gly	Leu	Asp	His	Ser	Gly
	850					855					860				
Arg	Thr	Leu	Pro	Ile	Gly	Gln	Asn	Phe	Pro	Ile	Arg	Gly	Ile	Gln	Leu
865					870					875					880
Tyr	Asp	Gly	Pro	Ile	Asn	Ile	Gln	Asn	Cys	Thr	Phe	Arg	Lys	Phe	Val
				885					890					895	
Ala	Leu	Glu	Gly	Arg	His	Thr	Ser	Ala	Leu	Ala	Phe	Arg	Leu	Asn	Asn
			900					905					910		
Ala	Trp	Gln	Ser	Cys	Pro	His	Asn	Asn	Val	Thr	Gly	Ile	Ala	Phe	Glu
			915				920					925			

Asp Val Pro Ile Thr Ser Arg Val Phe Phe Gly Glu Pro Gly Pro Trp
 930 935 940
 Phe Asn Gln Leu Asp Met Asp Gly Asp Lys Thr Ser Val Phe His Asp
 945 950 955 960
 Val Asp Gly Ser Val Ser Glu Tyr Pro Gly Ser Tyr Leu Thr Lys Asn
 965 970 975
 Asp Asn Trp Leu Val Arg His Pro Asp Cys Ile Asn Val Pro Asp Trp
 980 985 990
 Arg Gly Ala Ile Cys Ser Gly Cys Tyr Ala Gln Met Tyr Ile Gln Ala
 995 1000 1005
 Tyr Lys Thr Ser Asn Leu Arg Met Lys Ile Ile Lys Asn Asp Phe Pro
 1010 1015 1020
 Ser His Pro Leu Tyr Leu Glu Gly Ala Leu Thr Arg Ser Thr His Tyr
 1025 1030 1035 1040
 Gln Gln Tyr Gln Pro Val Val Thr Leu Gln Lys Gly Tyr Thr Ile His
 1045 1050 1055
 Trp Asp Gln Thr Ala Pro Ala Glu Leu Ala Ile Trp Leu Ile Asn Phe
 1060 1065 1070
 Asn Lys Gly Asp Trp Ile Arg Val Gly Leu Cys Tyr Pro Arg Gly Thr
 1075 1080 1085
 Thr Phe Ser Ile Leu Ser Asp Val His Asn Arg Leu Leu Lys Gln Thr
 1090 1095 1100
 Ser Lys Thr Gly Val Phe Val Arg Thr Leu Gln Met Asp Lys Val Glu
 1105 1110 1115 1120
 Gln Ser Tyr Pro Gly Arg Ser His Tyr Tyr Trp Asp Glu Asp Ser Gly
 1125 1130 1135
 Leu Leu Phe Leu Lys Leu Lys Ala Gln Asn Glu Arg Glu Lys Phe Ala
 1140 1145 1150
 Phe Cys Ser Met Lys Gly Cys Glu Arg Ile Lys Ile Lys Ala Leu Ile
 1155 1160 1165
 Pro Lys Asn Ala Gly Val Ser Asp Cys Thr Ala Thr Ala Tyr Pro Lys
 1170 1175 1180
 Phe Thr Glu Arg Ala Val Val Asp Val Pro Met Pro Lys Lys Leu Phe
 1185 1190 1195 1200
 Gly Ser Gln Leu Lys Thr Lys Asp His Phe Leu Glu Val Lys Met Glu
 1205 1210 1215
 Ser Ser Lys Gln His Phe Phe His Leu Trp Asn Asp Phe Ala Tyr Ile
 1220 1225 1230
 Glu Val Asp Gly Lys Lys Tyr Pro Ser Ser Glu Asp Gly Ile Gln Val
 1235 1240 1245
 Val Val Ile Asp Gly Asn Gln Gly Arg Val Val Ser His Thr Ser Phe
 1250 1255 1260
 Arg Asn Ser Ile Leu Gln Gly Ile Pro Trp Gln Leu Phe Asn Tyr Val
 1265 1270 1275 1280
 Ala Thr Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser Lys Gly Arg
 1285 1290 1295
 Tyr Val Ser Arg Gly Pro Trp Thr Arg Val Leu Glu Lys Leu Gly Ala
 1300 1305 1310
 Asp Arg Gly Leu Lys Leu Lys Glu Gln Met Ala Phe Val Gly Phe Lys
 1315 1320 1325
 Gly Ser Phe Arg Pro Ile Trp Val Thr Leu Asp Thr Glu Asp His Lys
 1330 1335 1340
 Ala Lys Ile Phe Gln Val Val Pro Ile Pro Val Val Lys Lys Lys Lys
 1345 1350 1355 1360
 Leu

<211> 755
 <212> PRT
 <213> Homo sapiens

<400> 14

Met	Pro	Pro	Phe	Leu	Leu	Leu	Glu	Ala	Val	Cys	Val	Phe	Leu	Phe	Ser
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Arg	Val	Pro	Pro	Ser	Leu	Pro	Leu	Gln	Glu	Val	His	Val	Ser	Lys	Glu
			20					25					30		
Thr	Ile	Gly	Lys	Ile	Ser	Ala	Ala	Ser	Lys	Met	Met	Trp	Cys	Ser	Ala
		35					40					45			
Ala	Val	Asp	Ile	Met	Phe	Leu	Leu	Asp	Gly	Ser	Asn	Ser	Val	Gly	Lys
	50					55					60				
Gly	Ser	Phe	Glu	Arg	Ser	Lys	His	Phe	Ala	Ile	Thr	Val	Cys	Asp	Gly
65				70						75					80
Leu	Asp	Ile	Ser	Pro	Glu	Arg	Val	Arg	Val	Gly	Ala	Phe	Gln	Phe	Ser
				85					90					95	
Ser	Thr	Pro	His	Leu	Glu	Phe	Pro	Leu	Asp	Ser	Phe	Ser	Thr	Gln	Gln
			100					105					110		
Glu	Val	Lys	Ala	Arg	Ile	Lys	Arg	Met	Val	Phe	Lys	Gly	Gly	Arg	Thr
		115					120						125		
Glu	Thr	Glu	Leu	Ala	Leu	Lys	Tyr	Leu	Leu	His	Arg	Gly	Leu	Pro	Gly
		130				135						140			
Gly	Arg	Asn	Ala	Ser	Val	Pro	Gln	Ile	Leu	Ile	Ile	Val	Thr	Asp	Gly
145					150					155					160
Lys	Ser	Gln	Gly	Asp	Val	Ala	Leu	Pro	Ser	Lys	Gln	Leu	Lys	Glu	Arg
				165					170					175	
Gly	Val	Thr	Val	Phe	Ala	Val	Gly	Val	Arg	Phe	Pro	Arg	Trp	Glu	Glu
			180					185					190		
Leu	His	Ala	Leu	Ala	Ser	Glu	Pro	Arg	Gly	Gln	His	Val	Leu	Leu	Ala
		195					200					205			
Glu	Gln	Val	Glu	Asp	Ala	Thr	Asn	Gly	Leu	Phe	Ser	Thr	Leu	Ser	Ser
		210				215					220				
Ser	Ala	Ile	Cys	Ser	Ser	Ala	Thr	Pro	Asp	Cys	Arg	Val	Glu	Ala	His
225					230					235					240
Pro	Cys	Glu	His	Arg	Thr	Leu	Glu	Met	Val	Arg	Glu	Phe	Ala	Gly	Asn
				245					250					255	
Ala	Pro	Cys	Trp	Arg	Gly	Ser	Arg	Arg	Thr	Leu	Ala	Val	Leu	Ala	Ala
			260					265					270		
His	Cys	Pro	Phe	Tyr	Ser	Trp	Lys	Arg	Val	Phe	Leu	Thr	His	Pro	Ala
		275					280					285			
Thr	Cys	Tyr	Arg	Thr	Thr	Cys	Pro	Gly	Pro	Cys	Asp	Ser	Gln	Pro	Cys
		290				295					300				
Gln	Asn	Gly	Gly	Thr	Cys	Val	Pro	Glu	Gly	Leu	Asp	Gly	Tyr	Gln	Cys
305					310					315					320
Leu	Cys	Pro	Leu	Ala	Phe	Gly	Gly	Glu	Ala	Asn	Cys	Ala	Leu	Lys	Leu
				325					330					335	
Ser	Leu	Glu	Cys	Arg	Val	Asp	Leu	Leu	Phe	Leu	Leu	Asp	Ser	Ser	Ala
			340				345					350			
Gly	Thr	Thr	Leu	Asp	Gly	Phe	Leu	Arg	Ala	Lys	Val	Phe	Val	Lys	Arg
		355					360					365			
Phe	Val	Arg	Ala	Val	Leu	Ser	Glu	Asp	Ser	Arg	Ala	Arg	Val	Gly	Val
		370				375					380				
Ala	Thr	Tyr	Ser	Arg	Glu	Leu	Leu	Val	Ala	Val	Pro	Val	Gly	Glu	Tyr
385					390					395					400
Gln	Asp	Val	Pro	Asp	Leu	Val	Trp	Ser	Leu	Asp	Gly	Ile	Pro	Phe	Arg
				405					410					415	
Gly	Gly	Pro	Thr	Leu	Thr	Gly	Ser	Ala	Leu	Arg	Gln	Ala	Ala	Glu	Arg
			420					425					430		

Gly Phe Gly Ser Ala Thr Arg Thr Gly Gln Asp Arg Pro Arg Arg Val
 435 440 445
 Val Val Leu Leu Thr Glu Ser His Ser Glu Asp Glu Val Ala Gly Pro
 450 455 460
 Ala Arg His Ala Arg Ala Arg Glu Leu Leu Leu Gly Val Gly Ser
 465 470 475 480
 Glu Ala Val Arg Ala Glu Leu Glu Glu Ile Thr Gly Ser Pro Lys His
 485 490 495
 Val Met Val Tyr Ser Asp Pro Gln Asp Leu Phe Asn Gln Ile Pro Glu
 500 505 510
 Leu Gln Gly Lys Leu Cys Ser Arg Gln Arg Pro Gly Cys Arg Thr Gln
 515 520 525
 Ala Leu Asp Leu Val Phe Met Leu Asp Thr Ser Ala Ser Val Gly Pro
 530 535 540
 Glu Asn Phe Ala Gln Met Gln Ser Phe Val Arg Ser Cys Ala Leu Gln
 545 550 555 560
 Phe Glu Val Asn Pro Asp Val Thr Gln Val Gly Leu Val Val Tyr Gly
 565 570 575
 Ser Gln Val Gln Thr Ala Phe Gly Leu Asp Thr Lys Pro Thr Arg Ala
 580 585 590
 Ala Met Leu Arg Ala Ile Ser Gln Ala Pro Tyr Leu Gly Gly Val Gly
 595 600 605
 Ser Ala Gly Thr Ala Leu Leu His Ile Tyr Asp Lys Val Met Thr Val
 610 615 620
 Gln Arg Gly Ala Arg Pro Gly Val Pro Lys Ala Val Val Val Leu Thr
 625 630 635 640
 Gly Gly Arg Gly Ala Glu Asp Ala Ala Val Pro Ala Gln Lys Leu Arg
 645 650 655
 Asn Asn Gly Ile Ser Val Leu Val Val Gly Val Gly Pro Val Leu Ser
 660 665 670
 Glu Gly Leu Arg Arg Leu Ala Gly Pro Arg Asp Ser Leu Ile His Val
 675 680 685
 Ala Ala Tyr Ala Asp Leu Arg Tyr His Gln Asp Val Leu Ile Glu Trp
 690 695 700
 Leu Cys Gly Glu Ala Lys Gln Pro Val Asn Leu Cys Lys Pro Ser Pro
 705 710 715 720
 Cys Met Asn Glu Gly Ser Cys Val Leu Gln Asn Gly Ser Tyr Arg Cys
 725 730 735
 Lys Cys Arg Asp Gly Trp Glu Gly Pro His Cys Glu Asn Arg Phe Leu
 740 745 750
 Arg Arg Pro
 755

<210> 15
 <211> 300
 <212> PRT
 <213> Homo sapiens

<400> 15
 Met Arg Ile Ala Val Ile Cys Phe Cys Leu Leu Gly Ile Thr Cys Ala
 1 5 10 15
 Ile Pro Val Lys Gln Ala Asp Ser Gly Ser Ser Glu Glu Lys Gln Leu
 20 25 30
 Tyr Asn Lys Tyr Pro Asp Ala Val Ala Thr Trp Leu Asn Pro Asp Pro
 35 40 45
 Ser Gln Lys Gln Asn Leu Leu Ala Pro Gln Thr Leu Pro Ser Lys Ser
 50 55 60

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Asn Glu Ser His Asp His Met Asp Asp Met Asp Asp Glu Asp Asp Asp
65          70          75          80
Asp His Val Asp Ser Gln Asp Ser Ile Asp Ser Asn Asp Ser Asp Asp
85          90          95
Val Asp Asp Thr Asp Asp Ser His Gln Ser Asp Glu Ser His His Ser
100        105        110
Asp Glu Ser Asp Glu Leu Val Thr Asp Phe Pro Thr Asp Leu Pro Ala
115        120        125
Thr Glu Val Phe Thr Pro Val Val Pro Thr Val Asp Thr Tyr Asp Gly
130        135        140
Arg Gly Asp Ser Val Val Tyr Gly Leu Arg Ser Lys Ser Lys Lys Phe
145        150        155        160
Arg Arg Pro Asp Ile Gln Tyr Pro Asp Ala Thr Asp Glu Asp Ile Thr
165        170        175
Ser His Met Glu Ser Glu Glu Leu Asn Gly Ala Tyr Lys Ala Ile Pro
180        185        190
Val Ala Gln Asp Leu Asn Ala Pro Ser Asp Trp Asp Ser Arg Gly Lys
195        200        205
Asp Ser Tyr Glu Thr Ser Gln Leu Asp Asp Gln Ser Ala Glu Thr His
210        215        220
Ser His Lys Gln Ser Arg Leu Tyr Lys Arg Lys Ala Asn Asp Glu Ser
225        230        235        240
Asn Glu His Ser Asp Val Ile Asp Ser Gln Glu Leu Ser Lys Val Ser
245        250        255
Arg Glu Phe His Ser His Glu Phe His Ser His Glu Asp Met Leu Val
260        265        270
Val Asp Pro Lys Ser Lys Glu Glu Asp Lys His Leu Lys Phe Arg Ile
275        280        285
Ser His Glu Leu Asp Ser Ala Ser Ser Glu Val Asn
290        295        300

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<210> 16
<211> 829
<212> PRT
<213> Homo sapiens

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<400> 16
Met Gly Leu Pro Arg Gly Pro Leu Ala Ser Leu Leu Leu Leu Gln Val
1          5          10          15
Cys Trp Leu Gln Cys Ala Ala Ser Glu Pro Cys Arg Ala Val Phe Arg
20        25        30
Glu Ala Glu Val Thr Leu Glu Ala Gly Gly Ala Glu Gln Glu Pro Gly
35        40        45
Gln Ala Leu Gly Lys Val Phe Met Gly Cys Pro Gly Gln Glu Pro Ala
50        55        60
Leu Phe Ser Thr Asp Asn Asp Asp Phe Thr Val Arg Asn Gly Glu Thr
65        70        75        80
Val Gln Glu Arg Arg Ser Leu Lys Glu Arg Asn Pro Leu Lys Ile Phe
85        90        95
Pro Ser Lys Arg Ile Leu Arg Arg His Lys Arg Asp Trp Val Val Ala
100       105       110
Pro Ile Ser Val Pro Glu Asn Gly Lys Gly Pro Phe Pro Gln Arg Leu
115       120       125
Asn Gln Leu Lys Ser Asn Lys Asp Arg Asp Thr Lys Ile Phe Tyr Ser
130       135       140
Ile Thr Gly Pro Gly Ala Asp Ser Pro Pro Glu Gly Val Phe Ala Val
145       150       155       160

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Glu	Lys	Glu	Thr	Gly	Trp	Leu	Leu	Leu	Asn	Lys	Pro	Leu	Asp	Arg	Glu	
				165					170					175		
Glu	Ile	Ala	Lys	Tyr	Glu	Leu	Phe	Gly	His	Ala	Val	Ser	Glu	Asn	Gly	
			180					185					190			
Ala	Ser	Val	Glu	Asp	Pro	Met	Asn	Ile	Ser	Ile	Ile	Val	Thr	Asp	Gln	
		195					200					205				
Asn	Asp	His	Lys	Pro	Lys	Phe	Thr	Gln	Asp	Thr	Phe	Arg	Gly	Ser	Val	
	210					215					220					
Leu	Glu	Gly	Val	Leu	Pro	Gly	Thr	Ser	Val	Met	Gln	Val	Thr	Ala	Thr	
225					230					235					240	
Asp	Glu	Asp	Asp	Ala	Ile	Tyr	Thr	Tyr	Asn	Gly	Val	Val	Ala	Tyr	Ser	
				245					250					255		
Ile	His	Ser	Gln	Glu	Pro	Lys	Asp	Pro	His	Asp	Leu	Met	Phe	Thr	Ile	
			260					265					270			
His	Arg	Ser	Thr	Gly	Thr	Ile	Ser	Val	Ile	Ser	Ser	Gly	Leu	Asp	Arg	
	275						280					285				
Glu	Lys	Val	Pro	Glu	Tyr	Thr	Leu	Thr	Ile	Gln	Ala	Thr	Asp	Met	Asp	
	290					295					300					
Gly	Asp	Gly	Ser	Thr	Thr	Thr	Ala	Val	Ala	Val	Val	Glu	Ile	Leu	Asp	
305					310					315					320	
Ala	Asn	Asp	Asn	Ala	Pro	Met	Phe	Asp	Pro	Gln	Lys	Tyr	Glu	Ala	His	
				325					330					335		
Val	Pro	Glu	Asn	Ala	Val	Gly	His	Glu	Val	Gln	Arg	Leu	Thr	Val	Thr	
		340						345					350			
Asp	Leu	Asp	Ala	Pro	Asn	Ser	Pro	Ala	Trp	Arg	Ala	Thr	Tyr	Leu	Ile	
	355						360					365				
Met	Gly	Gly	Asp	Asp	Gly	Asp	His	Phe	Thr	Ile	Thr	Thr	His	Pro	Glu	
	370				375						380					
Ser	Asn	Gln	Gly	Ile	Leu	Thr	Thr	Arg	Lys	Gly	Leu	Asp	Phe	Glu	Ala	
385					390					395					400	
Lys	Asn	Gln	His	Thr	Leu	Tyr	Val	Glu	Val	Thr	Asn	Glu	Ala	Pro	Phe	
			405						410					415		
Val	Leu	Lys	Leu	Pro	Thr	Ser	Thr	Ala	Thr	Ile	Val	Val	His	Val	Glu	
		420						425					430			
Asp	Val	Asn	Glu	Ala	Pro	Val	Phe	Val	Pro	Pro	Ser	Lys	Val	Val	Glu	
	435						440					445				
Val	Gln	Glu	Gly	Ile	Pro	Thr	Gly	Glu	Pro	Val	Cys	Val	Tyr	Thr	Ala	
	450					455					460					
Glu	Asp	Pro	Asp	Lys	Glu	Asn	Gln	Lys	Ile	Ser	Tyr	Arg	Ile	Leu	Arg	
465					470					475					480	
Asp	Pro	Ala	Gly	Trp	Leu	Ala	Met	Asp	Pro	Asp	Ser	Gly	Gln	Val	Thr	
			485						490					495		
Ala	Val	Gly	Thr	Leu	Asp	Arg	Glu	Asp	Glu	Gln	Phe	Val	Arg	Asn	Asn	
		500						505					510			
Ile	Tyr	Glu	Val	Met	Val	Leu	Ala	Met	Asp	Asn	Gly	Ser	Pro	Pro	Thr	
	515						520						525			
Thr	Gly	Thr	Gly	Thr	Leu	Leu	Thr	Leu	Ile	Asp	Val	Asn	Asp	His		
	530				535					540						
Gly	Pro	Val	Pro	Glu	Pro	Arg	Gln	Ile	Thr	Ile	Cys	Asn	Gln	Ser	Pro	
545					550					555					560	
Val	Arg	Gln	Val	Leu	Asn	Ile	Thr	Asp	Lys	Asp	Leu	Ser	Pro	His	Thr	
			565						570					575		
Ser	Pro	Phe	Gln	Ala	Gln	Leu	Thr	Asp	Asp	Ser	Asp	Ile	Tyr	Trp	Thr	
		580						585					590			
Ala	Glu	Val	Asn	Glu	Glu	Gly	Asp	Thr	Val	Val	Leu	Ser	Leu	Lys	Lys	
		595					600					605				
Phe	Leu	Lys	Gln	Asp	Thr	Tyr	Asp	Val	His	Leu	Ser	Leu	Ser	Asp	His	
	610					615					620					

Gly Asn Lys Glu Gln Leu Thr Val Ile Arg Ala Thr Val Cys Asp Cys
 625 630 635 640
 His Gly His Val Glu Thr Cys Pro Gly Pro Trp Lys Gly Gly Phe Ile
 645 650 655
 Leu Pro Val Leu Gly Ala Val Leu Ala Leu Leu Phe Leu Leu Leu Val
 660 665 670
 Leu Leu Leu Leu Val Arg Lys Lys Arg Lys Ile Lys Glu Pro Leu Leu
 675 680 685
 Leu Pro Glu Asp Asp Thr Arg Asp Asn Val Phe Tyr Tyr Gly Glu Glu
 690 695 700
 Gly Gly Gly Glu Glu Asp Gln Asp Tyr Asp Ile Thr Gln Leu His Arg
 705 710 715 720
 Gly Leu Glu Ala Arg Pro Glu Val Val Leu Arg Asn Asp Val Ala Pro
 725 730 735
 Thr Ile Ile Pro Thr Pro Met Tyr Arg Pro Arg Pro Ala Asn Pro Asp
 740 745 750
 Glu Ile Gly Asn Phe Ile Ile Glu Asn Leu Lys Ala Ala Asn Thr Asp
 755 760 765
 Pro Thr Ala Pro Pro Tyr Asp Thr Leu Leu Val Phe Asp Tyr Glu Gly
 770 775 780
 Ser Gly Ser Asp Ala Ala Ser Leu Ser Ser Leu Thr Ser Ser Ala Ser
 785 790 795 800
 Asp Gln Asp Gln Asp Tyr Asp Tyr Leu Asn Glu Trp Gly Ser Arg Phe
 805 810 815
 Lys Lys Leu Ala Asp Met Tyr Gly Gly Gly Glu Asp Asp
 820 825

<210> 17
 <211> 694
 <212> PRT
 <213> Homo sapiens

<400> 17
 Met Lys His Leu Lys Arg Trp Trp Ser Ala Gly Gly Gly Leu Leu His
 1 5 10 15
 Leu Thr Leu Leu Leu Ser Leu Ala Gly Leu Arg Val Asp Leu Asp Leu
 20 25 30
 Tyr Leu Leu Leu Pro Pro Pro Thr Leu Leu Gln Asp Glu Leu Leu Phe
 35 40 45
 Leu Gly Gly Pro Ala Ser Ser Ala Tyr Ala Leu Ser Pro Phe Ser Ala
 50 55 60
 Ser Gly Gly Trp Gly Arg Ala Gly His Leu His Pro Lys Gly Arg Glu
 65 70 75 80
 Leu Asp Pro Ala Ala Pro Pro Glu Gly Gln Leu Leu Arg Glu Val Arg
 85 90 95
 Ala Leu Gly Val Pro Phe Val Pro Arg Thr Ser Val Asp Ala Trp Leu
 100 105 110
 Val His Ser Val Ala Ala Gly Ser Ala Asp Glu Ala His Gly Leu Leu
 115 120 125
 Gly Ala Ala Ala Ala Ser Ser Thr Gly Gly Ala Gly Ala Ser Val Asp
 130 135 140
 Gly Gly Ser Gln Ala Val Gln Gly Gly Gly Gly Asp Pro Arg Ala Ala
 145 150 155 160
 Arg Ser Gly Pro Leu Asp Ala Gly Glu Glu Lys Ala Pro Ala Glu
 165 170 175
 Pro Thr Ala Gln Val Pro Asp Ala Gly Gly Cys Ala Ser Glu Glu Asn
 180 185 190

Gly	Val	Leu	Arg	Glu	Lys	His	Glu	Ala	Val	Asp	His	Ser	Ser	Gln	His
	195						200					205			
Glu	Glu	Asn	Glu	Glu	Arg	Val	Ser	Ala	Gln	Lys	Glu	Asn	Ser	Leu	Gln
	210					215					220				
Gln	Asn	Asp	Asp	Asp	Glu	Asn	Lys	Ile	Ala	Glu	Lys	Pro	Asp	Trp	Glu
225					230					235					240
Ala	Glu	Lys	Thr	Thr	Glu	Ser	Arg	Asn	Glu	Arg	His	Leu	Asn	Gly	Thr
			245						250					255	
Asp	Thr	Ser	Phe	Ser	Leu	Glu	Asp	Leu	Phe	Gln	Leu	Leu	Ser	Ser	Gln
		260					265						270		
Pro	Glu	Asn	Ser	Leu	Glu	Gly	Ile	Ser	Leu	Gly	Asp	Ile	Pro	Leu	Pro
	275					280						285			
Gly	Ser	Ile	Ser	Asp	Gly	Met	Asn	Ser	Ser	Ala	His	Tyr	His	Val	Asn
	290					295					300				
Phe	Ser	Gln	Ala	Ile	Ser	Gln	Asp	Val	Asn	Leu	His	Glu	Ala	Ile	Leu
305					310					315					320
Leu	Cys	Pro	Asn	Asn	Thr	Phe	Arg	Arg	Asp	Pro	Thr	Ala	Arg	Thr	Ser
			325						330					335	
Gln	Ser	Gln	Glu	Pro	Phe	Leu	Gln	Leu	Asn	Ser	His	Thr	Thr	Asn	Pro
		340						345					350		
Glu	Gln	Thr	Leu	Pro	Gly	Thr	Asn	Leu	Thr	Gly	Phe	Leu	Ser	Pro	Val
	355						360					365			
Asp	Asn	His	Met	Arg	Asn	Leu	Thr	Ser	Gln	Asp	Leu	Leu	Tyr	Asp	Leu
	370					375					380				
Asp	Ile	Asn	Ile	Phe	Asp	Glu	Ile	Asn	Leu	Met	Ser	Leu	Ala	Thr	Glu
385					390					395					400
Asp	Asn	Phe	Asp	Pro	Ile	Asp	Val	Ser	Gln	Leu	Phe	Asp	Glu	Pro	Asp
			405						410					415	
Ser	Asp	Ser	Gly	Leu	Ser	Leu	Asp	Ser	Ser	His	Asn	Asn	Thr	Ser	Val
			420				425						430		
Ile	Lys	Ser	Asn	Ser	Ser	His	Ser	Val	Cys	Asp	Glu	Gly	Ala	Ile	Gly
	435						440					445			
Tyr	Cys	Thr	Asp	His	Glu	Ser	Ser	Ser	His	His	Asp	Leu	Glu	Gly	Ala
	450					455					460				
Val	Gly	Gly	Tyr	Tyr	Pro	Glu	Pro	Ser	Lys	Leu	Cys	His	Leu	Asp	Gln
465					470					475					480
Ser	Asp	Ser	Asp	Phe	His	Gly	Asp	Leu	Thr	Phe	Gln	His	Val	Phe	His
			485						490					495	
Asn	His	Thr	Tyr	His	Leu	Gln	Pro	Thr	Ala	Pro	Glu	Ser	Thr	Ser	Glu
		500						505					510		
Pro	Phe	Pro	Trp	Pro	Gly	Lys	Ser	Gln	Lys	Ile	Arg	Ser	Arg	Tyr	Leu
	515						520					525			
Glu	Asp	Thr	Asp	Arg	Asn	Leu	Ser	Arg	Asp	Glu	Gln	Arg	Ala	Lys	Ala
	530					535					540				
Leu	His	Ile	Pro	Phe	Ser	Val	Asp	Glu	Ile	Val	Gly	Met	Pro	Val	Asp
545					550					555					560
Ser	Phe	Asn	Ser	Met	Leu	Ser	Arg	Tyr	Tyr	Leu	Thr	Asp	Leu	Gln	Val
			565						570					575	
Ser	Leu	Ile	Arg	Asp	Ile	Arg	Arg	Arg	Gly	Lys	Asn	Lys	Val	Ala	Ala
		580					585						590		
Gln	Asn	Cys	Arg	Lys	Arg	Lys	Leu	Asp	Ile	Ile	Leu	Asn	Leu	Glu	Asp
	595						600					605			
Asp	Val	Cys	Asn	Leu	Gln	Ala	Lys	Lys	Glu	Thr	Leu	Lys	Arg	Glu	Gln
	610					615					620				
Ala	Gln	Cys	Asn	Lys	Ala	Ile	Asn	Ile	Met	Lys	Gln	Lys	Leu	His	Asp
625					630					635					640
Leu	Tyr	His	Asp	Ile	Phe	Ser	Arg	Leu	Arg	Asp	Asp	Gln	Gly	Arg	Pro
			645						650					655	

Val Asn Pro Asn His Tyr Ala Leu Gln Cys Thr His Asp Gly Ser Ile
 660 665 670
 Leu Ile Val Pro Lys Glu Leu Val Ala Ser Gly His Lys Lys Glu Thr
 675 680 685
 Gln Lys Gly Lys Arg Lys
 690

<210> 18
 <211> 402
 <212> PRT
 <213> Homo sapiens

<400> 18
 Met Lys Leu Glu Val Phe Val Pro Arg Ala Ala His Gly Asp Lys Gln
 1 5 10 15
 Gly Ser Asp Leu Glu Gly Ala Gly Gly Ser Asp Ala Pro Ser Pro Leu
 20 25 30
 Ser Ala Ala Gly Asp Asp Ser Leu Gly Ser Asp Gly Asp Cys Ala Ala
 35 40 45
 Lys Pro Ser Ala Gly Gly Gly Ala Arg Asp Thr Gln Gly Asp Gly Glu
 50 55 60
 Gln Ser Ala Gly Gly Gly Pro Gly Ala Glu Glu Ala Ile Pro Ala Ala
 65 70 75 80
 Ala Ala Ala Ala Val Val Ala Glu Gly Ala Glu Ala Gly Ala Ala Gly
 85 90 95
 Pro Gly Ala Gly Gly Ala Gly Ser Gly Glu Gly Ala Arg Ser Lys Pro
 100 105 110
 Tyr Thr Arg Arg Pro Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Ala
 115 120 125
 Met Ala Ile Arg Asp Ser Ala Gly Gly Arg Leu Thr Leu Ala Glu Ile
 130 135 140
 Asn Glu Tyr Leu Met Gly Lys Phe Pro Phe Phe Arg Gly Ser Tyr Thr
 145 150 155 160
 Gly Trp Arg Asn Ser Val Arg His Asn Leu Ser Leu Asn Asp Cys Phe
 165 170 175
 Val Lys Val Leu Arg Asp Pro Ser Arg Pro Trp Gly Lys Asp Asn Tyr
 180 185 190
 Trp Met Leu Asn Pro Asn Ser Glu Tyr Thr Phe Ala Asp Gly Val Phe
 195 200 205
 Arg Arg Arg Arg Lys Arg Leu Ser His Arg Ala Pro Val Pro Ala Pro
 210 215 220
 Gly Leu Arg Pro Glu Glu Ala Pro Gly Leu Pro Ala Ala Pro Pro Pro
 225 230 235 240
 Ala Pro Ala Ala Pro Ala Ser Pro Arg Met Arg Ser Pro Ala Arg Gln
 245 250 255
 Glu Glu Arg Ala Ser Pro Ala Gly Lys Phe Ser Ser Ser Phe Ala Ile
 260 265 270
 Asp Ser Ile Leu Arg Lys Pro Phe Arg Ser Arg Arg Leu Arg Asp Thr
 275 280 285
 Ala Pro Gly Thr Thr Leu Gln Trp Gly Ala Ala Pro Cys Pro Pro Leu
 290 295 300
 Pro Ala Phe Pro Ala Leu Leu Pro Ala Ala Pro Cys Arg Ala Leu Leu
 305 310 315 320
 Pro Leu Cys Ala Tyr Gly Ala Gly Glu Pro Ala Arg Leu Gly Ala Arg
 325 330 335
 Glu Ala Glu Val Pro Pro Thr Ala Pro Pro Leu Leu Leu Ala Pro Leu
 340 345 350

Pro Ala Ala Ala Pro Ala Lys Pro Leu Arg Gly Pro Ala Ala Gly Gly
 355 360 365
 Ala His Leu Tyr Cys Pro Leu Arg Leu Pro Ala Ala Leu Gln Ala Ala
 370 375 380
 Leu Val Arg Arg Pro Gly Pro His Leu Ser Tyr Pro Val Glu Thr Leu
 385 390 395 400
 Leu Ala

<210> 19
 <211> 209
 <212> PRT
 <213> Homo sapiens

<400> 19
 Met Glu Lys His His Val Pro Ser Asp Phe Asn Val Asn Val Lys Val
 1 5 10 15
 Asp Thr Gly Pro Arg Glu Asp Leu Ile Lys Val Leu Glu Asp Met Arg
 20 25 30
 Gln Glu Tyr Glu Leu Ile Ile Lys Lys His Arg Asp Leu Asp Thr
 35 40 45
 Trp Tyr Lys Glu Gln Ser Ala Ala Met Ser Gln Glu Ala Ala Ser Pro
 50 55 60
 Ala Thr Val Gln Ser Arg Gln Gly Asp Ile His Glu Leu Lys Arg Thr
 65 70 75 80
 Phe Gln Ala Leu Glu Ile Asp Leu Gln Ala Gln Tyr Ser Thr Lys Ser
 85 90 95
 Ala Leu Glu Asn Met Leu Ser Glu Thr Gln Ser Arg Tyr Ser Cys Lys
 100 105 110
 Leu Gln Asp Met Gln Glu Ile Ile Ser His Tyr Glu Glu Glu Leu Thr
 115 120 125
 Gln Leu Arg His Glu Leu Glu Arg Gln Asn Asn Glu Tyr Gln Val Leu
 130 135 140
 Leu Gly Ile Lys Thr His Leu Glu Lys Glu Ile Thr Thr Tyr Arg Arg
 145 150 155 160
 Leu Leu Glu Gly Glu Ser Glu Gly Thr Arg Glu Glu Ser Lys Ser Ser
 165 170 175
 Met Lys Val Ser Ala Thr Pro Lys Ile Lys Ala Ile Thr Gln Glu Thr
 180 185 190
 Ile Asn Gly Arg Leu Val Leu Cys Gln Val Asn Glu Ile Gln Lys His
 195 200 205
 Ala

<210> 20
 <211> 278
 <212> PRT
 <213> Homo sapiens

<400> 20
 Met Asp Lys Ser Gly Ile Asp Ser Leu Asp His Val Thr Ser Asp Ala
 1 5 10 15
 Val Glu Leu Ala Asn Arg Ser Asp Asn Ser Ser Asp Ser Ser Leu Phe
 20 25 30
 Lys Thr Gln Cys Ile Pro Tyr Ser Pro Lys Gly Glu Lys Arg Asn Pro
 35 40 45

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Ile Arg Lys Phe Val Arg Thr Pro Glu Ser Val His Ala Ser Asp Ser
 50          55          60
Ser Ser Asp Ser Ser Phe Glu Pro Ile Pro Leu Thr Ile Lys Ala Ile
65          70          75          80
Phe Glu Arg Phe Lys Asn Arg Lys Lys Arg Tyr Lys Lys Lys Lys Lys
      85          90          95
Arg Arg Tyr Gln Pro Thr Gly Arg Pro Arg Gly Arg Pro Glu Gly Arg
      100          105          110
Arg Asn Pro Ile Tyr Ser Leu Ile Asp Lys Lys Lys Lys Gln Phe Arg Ser
      115          120          125
Arg Gly Ser Gly Phe Pro Phe Leu Glu Ser Glu Asn Glu Lys Asn Ala
      130          135          140
Pro Trp Arg Lys Ile Leu Thr Phe Glu Gln Ala Val Ala Arg Gly Phe
145          150          155          160
Phe Asn Tyr Ile Glu Lys Leu Lys Tyr Glu His His Leu Lys Glu Ser
      165          170          175
Leu Lys Gln Met Asn Val Gly Glu Asp Leu Glu Asn Glu Asp Phe Asp
      180          185          190
Ser Arg Arg Tyr Lys Phe Leu Asp Asp Asp Gly Ser Ile Ser Pro Ile
      195          200          205
Glu Glu Ser Thr Ala Glu Asp Glu Asp Ala Thr His Leu Glu Asp Asn
      210          215          220
Glu Cys Asp Ile Lys Leu Ala Gly Asp Ser Phe Ile Val Ser Ser Glu
225          230          235          240
Phe Pro Val Arg Leu Ser Val Tyr Leu Glu Glu Glu Asp Ile Thr Glu
      245          250          255
Glu Ala Ala Leu Ser Lys Lys Arg Ala Thr Lys Ala Lys Asn Thr Gly
      260          265          270
Gln Arg Gly Leu Lys Met
      275

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<210> 21
<211> 488
<212> PRT
<213> Homo sapiens

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<400> 21
Ala Val Leu Ala Ala His Cys Pro Phe Tyr Ser Trp Lys Arg Val Phe
 1          5          10          15
Leu Thr His Pro Ala Thr Cys Tyr Arg Thr Thr Cys Pro Gly Pro Cys
      20          25          30
Asp Ser Gln Pro Cys Gln Asn Gly Gly Thr Cys Val Pro Glu Gly Leu
      35          40          45
Asp Gly Tyr Gln Cys Leu Cys Pro Leu Ala Phe Gly Gly Glu Ala Asn
      50          55          60
Cys Ala Leu Lys Leu Ser Leu Glu Cys Arg Val Asp Leu Leu Phe Leu
65          70          75          80
Leu Asp Ser Ser Ala Gly Thr Thr Leu Asp Gly Phe Leu Arg Ala Lys
      85          90          95
Val Phe Val Lys Arg Phe Val Arg Ala Val Leu Ser Glu Asp Ser Arg
      100          105          110
Ala Arg Val Gly Val Ala Thr Tyr Ser Arg Glu Leu Leu Val Ala Val
      115          120          125
Pro Val Gly Glu Tyr Gln Asp Val Pro Asp Leu Val Trp Ser Leu Asp
      130          135          140
Gly Ile Pro Phe Arg Gly Gly Pro Thr Leu Thr Gly Ser Ala Leu Arg
145          150          155          160

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Gln Ala Ala Glu Arg Gly Phe Gly Ser Ala Thr Arg Thr Gly Gln Asp
 165 170 175
 Arg Pro Arg Arg Val Val Val Leu Leu Thr Glu Ser His Ser Glu Asp
 180 185 190
 Glu Val Ala Gly Pro Ala Arg His Ala Arg Ala Arg Glu Leu Leu Leu
 195 200 205
 Leu Gly Val Gly Ser Glu Ala Val Arg Ala Glu Leu Glu Glu Ile Thr
 210 215 220
 Gly Ser Pro Lys His Val Met Val Tyr Ser Asp Pro Gln Asp Leu Phe
 225 230 235 240
 Asn Gln Ile Pro Glu Leu Gln Gly Lys Leu Cys Ser Arg Gln Arg Pro
 245 250 255
 Gly Cys Arg Thr Gln Ala Leu Asp Leu Val Phe Met Leu Asp Thr Ser
 260 265 270
 Ala Ser Val Gly Pro Glu Asn Phe Ala Gln Met Gln Ser Phe Val Arg
 275 280 285
 Ser Cys Ala Leu Gln Phe Glu Val Asn Pro Asp Val Thr Gln Val Gly
 290 295 300
 Leu Val Val Tyr Gly Ser Gln Val Gln Thr Ala Phe Gly Leu Asp Thr
 305 310 315 320
 Lys Pro Thr Arg Ala Ala Met Leu Arg Ala Ile Ser Gln Ala Pro Tyr
 325 330 335
 Leu Gly Gly Val Gly Ser Ala Gly Thr Ala Leu Leu His Ile Tyr Asp
 340 345 350
 Lys Val Met Thr Val Gln Arg Gly Ala Arg Pro Gly Val Pro Lys Ala
 355 360 365
 Val Val Val Leu Thr Gly Gly Arg Gly Ala Glu Asp Ala Ala Val Pro
 370 375 380
 Ala Gln Lys Leu Arg Asn Asn Gly Ile Ser Val Leu Val Val Gly Val
 385 390 395 400
 Gly Pro Val Leu Ser Glu Gly Leu Arg Arg Leu Ala Gly Pro Arg Asp
 405 410 415
 Ser Leu Ile His Val Ala Ala Tyr Ala Asp Leu Arg Tyr His Gln Asp
 420 425 430
 Val Leu Ile Glu Trp Leu Cys Gly Glu Ala Lys Gln Pro Val Asn Leu
 435 440 445
 Cys Lys Pro Ser Pro Cys Met Asn Glu Gly Ser Cys Val Leu Gln Asn
 450 455 460
 Gly Ser Tyr Arg Cys Lys Cys Arg Asp Gly Trp Glu Gly Pro His Cys
 465 470 475 480
 Glu Asn Arg Phe Leu Arg Arg Pro
 485

<210> 22

<211> 13

<212> PRT

<213> Homo sapiens

<400> 22

Ala Val Leu Ala Ala His Cys Pro Phe Tyr Ser Trp Lys
 1 5 10